



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,475	09/29/2006	Niall James Caldwell	1025-P04207US0	9543
110 7590 12/24/2009 DANN, DORFMAN, HERRELL & SKILLMAN 1601 MARKET STREET SUITE 2400 PHILADELPHIA, PA 19103-2307				
EXAMINER STIMPERT, PHILIPPEARL				
ART UNIT		PAPER NUMBER		
3746				
MAIL DATE		DELIVERY MODE		
12/24/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,475

Applicant(s)

CALDWELL ET AL.

Examiner

Philip Stimpert

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2009 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The amendment filed 21 August 2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the replacement drawing shows a structural relationship (ie radially opposed) of multiple cylinders that is not supported by the original disclosure. The examiner notes that the claims as originally filed provide support for multiple cylinders, but they do not specify any orientation thereof.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 1,774,662 to Parks (Parks) in view of US Patent 5,456,581 to Jokela et al.

(Jokela) and US Patent 5,259,738 to Salter et al. (Salter).

4. Regarding claim 1, Parks teaches a fluid working machine (Fig. 1) with variable volume working chambers (11, 12) which is connected to a commutator valve (55) which alternately connects the working chamber (11) to either of two manifolds (46,

65/54), and a flow path (51) between the chamber (11) and the commutator valve (55).

Parks does not teach a valve in the flow path (51). Jokela teaches a fluid working machine having several working chambers (53) and having electronically controlled valves (84) in the inlet to the chamber. Jokela teaches these valves as elements in a system for regulating the outlet pressure. However, the valves (84) of Jokela also operate as check valves regulating inlet flow, and cannot be closed on command. Since the commutator valve of Parks handles inlet and outlet flow switching and checking, one of ordinary skill would appreciate that a different type of valve would be needed in order to obtain the pressure regulation of Jokela. Salter teaches a solenoid valve (13) which allows electronic closure of a passageway. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pump of Parks with solenoid valves as taught by Salter provided in the flow path (51) as taught by Jokela in order to regulate the outlet pressure of the pump of Parks.

5. Regarding claim 2, Jokela and Salter both teach that the valve is electronically controlled.

6. Regarding claim 3, Jokela teaches a shaft position sensor (102) which provides information to a controller (104) as to when the shaft passes a known phase angle (col. 4, ln. 5-22). Since the shaft position sensor (102) provides information to the controller (104) as part of the pressure regulation system being provided to Parks by the instant combination, it would have been obvious to provide the pump of Parks with a shaft position sensor as taught by Jokela in order to provide the information necessary for pressure regulation (see Jokela, col. 4, ln. 5-22).

7. Regarding claim 4, in modifying the pump of Parks, it would be obvious to one of ordinary skill to use the valves provided per the teachings of Jokela and Salter to isolate the working chamber in order to effect a decrease in outlet pressure. Further, the working chamber volume is a cyclic variable. Therefore the volume may be considered to be "approaching its minimum" at substantially any point in the cycle, since a minimum will be encountered thereafter. Finally, "close to the time" is considered to be very broad language reading on any point in the cycle. Thus any particular point of actuation of the valve is considered to satisfy the language of claim 4.

8. Regarding claim 5, Salter teaches that a control system for a pump which takes cylinders out of service may be run by a controller to sum a previous flow demand relative to the output flow to create a total displacement demand and compare it with an error, and based thereon, to choose whether to activate a particular cylinder in order to minimize ongoing displacement error (col. 6, ln. 10-55). It would have been obvious to one of ordinary skill in the art to apply this method as taught by Salter to the pump of Parks as controlled by the controller of Jokela, in order to minimize errors in a system employing the pump.

9. Regarding claim 6, Salter teaches a controller reading demand from an external signal line (col. 6, ln. 34-36) in order to regulate volumetric flow rate (col. 6, ln. 27-31) by deciding whether or isolate or activate working chambers.

10. Regarding claim 7, Jokela teaches maintaining constant output pressure, which one of ordinary skill in the art would expect to be effectively proportional to throughput flow. One of ordinary skill would expect the ratio of working to idle cylinders to fall as

shaft speed (measured by shaft encoder 102) rises, in order to maintain the constant output pressure.

11. Regarding claim 8, Salter teaches an apparatus which may be configured as a motor. One of ordinary skill would appreciate that such a configuration would be possible with the pump of Parks, for instance by reversing the commutator valve (55). So modified, the controller would be able to choose the actuation point of the valve member. As such, it is capable of performing the function set forth by claim 8. The examiner notes that claim 8 merely requires that the controller "can choose" to operate as specified.

12. Regarding claim 9, Parks teaches that the apparatus is arranged to function as a pump. Further, the controller would be able to choose the actuation point of the valve member. As such, it is capable of performing the function set forth by claim 9.

13. Regarding claim 10, the controller of the combined references would be able to choose the actuation point of the valve member. As such, it is capable of being operated in the fashion set forth by claim 10.

Response to Arguments

14. Applicant's arguments filed 21 August 2009 have been fully considered but they are not persuasive.

15. With respect to the drawings, as noted above, while the replacement drawing sheet provides basis for the multiple working chambers, it also presents new matter in the arrangement of those cylinders.

16. With respect to the arguments regarding the combination of Parks, Jokela, and Salter, the examiner does not find the arguments persuasive. Parks teaches a mechanically commutated pump which is not subject to any control variable other than shaft speed. Jokela teaches a means of selectively disengaging cylinders of a multiple cylinder device by rerouting their discharge path with an electronically controlled valve. One of ordinary skill can readily appreciate that the ability to selectively disengage one or more of the cylinders of Parks would increase the operational flexibility of that pump. However, in modifying the pump of Parks to take advantage of the selective disengagement taught by Jokela, a different valve type which can be held closed would be necessary, which is taught by Salter. Thus the combination provides for an electronically controlled valve between the commutator valve of Parks and each cylinder thereof. In light of the foregoing, the present rejection is maintained.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571)270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/P. S./
Examiner, Art Unit 3746
18 December 2009